Name:

## p1103: Factoring with box when $a$ = prime (v7)

### Example

Use the box to factor $2x^2 - 9x - 18$.

Guess and check, based on factor pairs of $-18$, until you find the pair that results in a linear coefficient of $-9$ after combining like terms.

| * | x | −6 |
|---|---|---|
| 2x | $2x^2$ | −12x |
| 3 | 3x | −18 |

$2x^2 - 12x + 3x - 18$

Combine like terms.

$2x^2 - 9x - 18$

ANSWER: $(2x + 3)(x - 6)$

### Question 1

Use the box to factor $5x^2 + 43x + 56$.

| * | x | 7 |
|---|---|---|
| 5x | $5x^2$ | 35x |
| 8 | 8x | 56 |

ANSWER: $(5x + 8)(x + 7)$

## Question 2

Use the box to factor $3x^2 - 17x - 56$.

| * | x | $-8$ |
|---|---|---|
| $3x$ | $3x^2$ | $-24x$ |
| $7$ | $7x$ | $-56$ |

ANSWER: $(3x + 7)(x - 8)$

## Question 3

Use the box to factor $7x^2 - 37x + 36$.

| * | x | $-4$ |
|---|---|---|
| $7x$ | $7x^2$ | $-28x$ |
| $-9$ | $-9x$ | $36$ |

ANSWER: $(7x - 9)(x - 4)$